

Jan. 17. Fancied a slight condensation, not central, but toward the N.E. The comet was excessively faint, and very difficult to observe. The want of a distinct nucleus necessarily makes the place uncertain.

Jan. 20. The comet appears like a very faint, wispy cloud, rather more condensed toward the northern portion. I apprehend there may have been small stars seen through the body during the observation, which was most difficult and uncertain.

Jan. 23. The observation as satisfactory as could be expected from the extreme faintness of the object. I have never had a stronger impression of the very vapoury nature of such bodies.

Jan. 24. The comet was close north, following Weisse 414, so close that it increased the difficulty of the observation. The moon, also, rather troublesome. I cannot depend much on the observation though carefully taken.

Feb. 13. The alteration in the brightness of the comet is unexpectedly great. It is now a fine object. The light at least equal to that of a star 10th magnitude, and beautifully white. The appearance is that of a rich round nebula, with a concentration of light, but no nucleus. The faint nebulosity did not seem to extend so far in the N.E. direction as elsewhere.

Feb. 21. Beautifully shown. Like a fine round nebula, uniformly surrounded by an atmosphere gradually fading off.

Feb. 24. Beautifully shown. Observation made with great care.

Feb. 25. Observation very carefully made.

March 8. Observed an object near to where the comet ought to be; but its light was so bright and concentrated that I had much doubt whether it was not a star. If it was the comet, the compared star is Weisse, 476, which was extremely faint, and the places would be,—

Weisse, 476	^h 0 ^m 27 ^s 51.44	— 1.61	[°] + 7 ['] 19 ["] 53.22	— 10.10
Comet, March 8.336181	0 29 4.35		+ 7 10 41.1	

I could not see Weisse, 510. The object was very low. Clouded before the observation could be satisfactorily completed.

March 10. Sought for the comet in a tolerably clear sky. Could not see it.

On the Comet of 1689.

By Mr. Vogel, of Mr. Bishop's Observatory, South Villa,
Regent's Park.

This great comet was invisible in Europe. It was seen at Pekin from December 10th to 21st, where the tail was from 10° to 12° above the horizon. At Ternate, the length of the tail on December 11th was 35° $\frac{1}{2}$; on the 14th, 45°; on the 15th, 47°; and on the 22d, 60°; and was 2 $\frac{1}{2}$ ^h in rising. It was last seen on December 24th, and was then greatly enfeebled by moonlight. It was observed by many Dutch ships in the vicinity of the equator. The observations upon which the orbit depends were taken by Father Richaud at Pondicherry, and by Béze and Comille at Malaca. On December 10th, at 4 o'clock A.M. (or December 9th, 10^h Greenwich mean time, Malaca being 102° $\frac{1}{4}$ east of Greenwich), the comet was remarked to be in the intersection of two lines, one drawn from π *Centauri* of Bayer (4858 B.A.C.) and ϕ *Lupi* of La Caille (5054 B.A.C.), the other passing through α and ξ *Lupi* of Bayer (B.A.C. 4924 and 5046), in the mouth of the *Wolf*, between

the tongue and the jaw; whence we have for the equinox of 1690, comet's longitude $239^{\circ} 30'$, latitude S. $16^{\circ} 0'$. Richaud also says the comet was in the mouth of the *Wolf*, between the tongue and the jaw; which, by Bayer's old atlas, would give, longitude $238^{\circ} 40'$, latitude S. $14^{\circ} 30'$; but this does not agree with the alignments. On December 14, according to all three observers, the comet was very near the small star ν (Bayer) *Lupi* (5139 ν *Lupi* in the B.A.C.) Richaud says "*tout proche*," and Béze, "*presque sur*:" hence the longitude comes out $238^{\circ} 7' 6$, latitude S. $22^{\circ} 26' 9$. On December 21, Richaud saw the comet 1° distant from the foot of the *Centaur* (α *Centauri*), certainly north of the star; since, on the 23d, it was still seen near the same: the assumed position is longitude $235^{\circ} 5'$, latitude S. $42^{\circ} 0'$. Béze and Comille say the comet moved between the 15th and 19th in a right line along the back of the *Wolf* towards α *Centauri*. The orbit which I have calculated upon these places gives, for the middle observation, errors of $-0' 6$ in longitude and $+4' 5$ in latitude; and is, therefore, very satisfactory. They are as follow:—

T	Nov. 29	200	
π	$269^{\circ} 41' 1$		
Ω	$90^{\circ} 25' 4$		
i	$59^{\circ} 4' 5$		
Log q	8.27720	Motion retrograde.	

The supposed identity of the comet of 1689 with that of 1843 (suggested by Professor Peirce*) is not by any means admissible, though there was an outward similarity between the two comets. The elements exhibit the following large differences:—

$\Delta \pi$	$+ 7^{\circ} 7'$
$\Delta \Omega$	$- 90^{\circ} 56'$
Δi	$- 23^{\circ} 25'$
Δq	$- 0.01337$

nearly three times the least distance of the comet of 1843.

The following is a tabular view of the results given by the various orbits for this comet, as compared with the positions above given, the first two of which are not liable to more than $15'$ error:—

	Dec. 10.		Dec. 14.		Dec. 21.	
	l	b	l	b	l	b
Observation	$239^{\circ} 30' - 16^{\circ} 0'$		$238^{\circ} 8' - 22^{\circ} 27'$		$235^{\circ} 5' - 42^{\circ} 0'$	
Pingré	$239^{\circ} 26'$	$16^{\circ} 48'$	$237^{\circ} 45'$	$24^{\circ} 19'$	$235^{\circ} 45'$	$38^{\circ} 26'$
Peirce	$239^{\circ} 18'$	$13^{\circ} 8'$	$237^{\circ} 36'$	$21^{\circ} 10'$	$235^{\circ} 15'$	$39^{\circ} 11'$
Vogel	$239^{\circ} 30'$	$16^{\circ} 0'$	$238^{\circ} 7'$	$22^{\circ} 31'$	$235^{\circ} 5'$	$42^{\circ} 0'$
Comet 1843	$239^{\circ} 48' - 16^{\circ} 26'$		$238^{\circ} 50' - 25^{\circ} 10'$		$236^{\circ} 56' - 42^{\circ} 14'$	

* Peirce's elements in Galle's Catalogue are for the equinox of 1843.

The differences between the calculated and observed places are as subjoined:—

	Dec. 10.		Dec. 14.		Dec. 21.	
	Δl	Δb	$\Delta l'$	$\Delta b''$	$\Delta l''$	$\Delta b''$
Pingré	— 0 4	— 0 48	— 0 23	— 1 52	+ 0 40	+ 3 34
Peirce	— 0 12	+ 2 52	— 0 32	+ 1 17	+ 0 10	+ 2 49
Vogel	0 0	0 0	— 0 1	— 0 4	0 0	0 0
1843	+ 0 18	— 0 26	+ 0 42	— 2 43	+ 1 51	— 0 14

The sums of the squares of these errors are,—

Pingré	62770
Peirce	65343
1843	41850
Vogel	17

The elements assumed for the comet of 1843 are those calculated by M. Valz of Marseille.

NEW NEBULA.

In April last Mr. Hind remarked a nebulous object in *Ophiuchus* near Lalande 33076, which does not occur in any of the catalogues of nebulae hitherto consulted. Its mean place for the beginning of 1852 is

$$\text{R.A. } 17^{\text{h}} 56^{\text{m}} 15^{\text{s}} \qquad \text{N.P.D. } 90^{\circ} 17'.8$$

It is very small and rather faint, perhaps 1' in diameter, and is preceded a few seconds by a very minute hazy-looking star.

Micrometrical Measures of γ Virginis. By Isaac Fletcher, Esq., Tarn Bank.

Position.	Obs.	Wt.	Power.	Distance.	Obs.	Wt.	Power.	Epoch.
174 23	8	2	300	3.227	8	2	300	1852.416
175 26	8	3	300	3.075	8	3	300	.424
175 39	8	3	300	3.151	8	3	300	.427
175 29	8	2	300	3.157	8	3	300	.427
175 57	8	2	230	3.166	8	2	230	.430
Mean 175 24	40	12	...	3.149	40	13	...	1852.425 Result.

The observations are made with an achromatic equatoreal, of 6 feet focus, driven by clock-work.

The weights are assigned on the principle adopted by Sir John Herschel, in reducing his measures at the Cape.